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USAID GREENING PREY LANG RAPID ASSESSMENT

COVID-19 IMPACTS ON COMMUNITY LIVELIHOODS AND NATURAL RESOURCES

JULY 2020

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Cover Photo: Agricultural Cooperative members from Kampong Thom province produce palm sugar for sale in local Cambodian markets. Credit: USAID Greening Prey Lang.

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ACRONYMS AND ABBREVIATIONS

AC	Agriculture Cooperative
CWS	Chhaeb Wildlife Sanctuary
CPA	Community Protected Area
COVID-19	Coronavirus Disease 2019
GDP	Gross Domestic Product
GPL	Greening Prey Lang
KPT	Kampong Thom Province
KPWS	Kulen Promtep Wildlife Sanctuary
KRT	Kratie Province
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Product
PA	Protected Area
PDoE	Provincial Department of Environment
PLEL	Prey Lang Extended Landscape
PLWS	Prey Lang Wildlife Sanctuary
PVH	Preah Vihear Province
REDD+	Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
STR	Stung Treng Province
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

USAID Greening Prey Lang (GPL) conducted a rapid assessment to survey community awareness on coronavirus disease 2019 (COVID-19), community member's current livelihood activities and any changes over the past year, and how COVID-19 directly or indirectly affects community livelihoods and natural resources in target communities in the Prey Lang Extended Landscape (PLEL). The following are key conclusions from the assessment:

- **People in Target Communities in the PLEL are Well Aware of COVID-19.** Every one of the surveyed community members were aware of COVID-19 to a great extent. Their awareness covered all aspects about the disease, including how the disease spreads, its symptoms, prevention measures, and where it originated. With an understanding of the disease's seriousness and its ability to spread easily, all surveyed community members reported strictly practicing measures to keep themselves and their family safe.
- **Climate Change Affected Community Livelihoods.** People in target communities in the PLEL are facing greater vulnerability in their livelihoods, primarily due to climate change. The most severe effect of climate change on livelihoods is the decrease in availability of water caused from lack of and late rainfall. This has resulted in late planting and decline in agriculture yields. Similarly, non-timber forest product (NTFP) yields have decreased, especially resin, forest fruits, and mushrooms, resulting in a reduction in family income generation. The lack of rainfall and increasing temperature also have a deadly effect on livestock, fish, and wildlife, making livestock raising less profitable. The assessment recommends certain interventions to consider for addressing these climate change impacts which include support implementation of climate smart agriculture, facilitate market linkages for vegetable and other agriculture products, support interventions to improve natural management and prevention forest loss, support interventions to improve retention of water resource, and mobilize investments to prevent forest loss and support communities.
- **COVID-19 Affected Sale of Agriculture Products and Other Businesses.** COVID-19 restricted movement, reduced daily spending, and slowed down almost all aspects of business operations, including business in agriculture products. It has narrowed the market and lowered the price of agriculture products, especially cashew nut and cassava. Cashew nut, which is grown by 45% of community member respondents, has declined in price by approximately 50% compared to the previous year. This reduction in price, in addition to the loss of jobs in other sectors due to the travel ban and businesses being closed, has resulted in a significant loss of family income. COVID-19 has also negatively impacted the livelihoods of those who used to depend on ecotourism in the PLEL. To address the financial impacts to communities from COVID-19, the project should consider the following interventions which include improve local market linkages and facilitate farmers to engage with ACs, offer support for alternative livelihood options that can generate income in short term, and promote target ecotourism sites to attract local tourists.
- **Increasing Offenses on Natural Resources.** COVID-19 has had an indirect negative effect on natural resources, especially forest and wildlife. In certain communities in the PLEL, there have recently been a reported increase in illegal logging and land clearance for cultivation, which destroy wildlife habitat, and poisoning of wildlife. These illegal activities have also affected community livelihoods, especially those who depend on NTFPs. Logging and clearing of forest land, in addition to climate change, have continuously reduced NTFP yields and wildlife populations each year, and have a negative effect on community livelihoods due to reduced

access to ecosystem services. To counter these increasing natural resource offenses, the following activities should be considered as immediate interventions, which include continue support for community patrols and joint patrols and increase frequency in areas where logging and forest clearance cases have occurred, support streamlining the process of zoning and demarcation of target PAs and CPAs, and strengthen local stakeholder collaboration to build awareness of forest and natural resource protection and to ensure broad engagement towards a common goal.

- **COVID-19 Is A Threat Multiplier.** Surveyed communities highlighted the challenges on ensuring sustainable rural livelihoods and persistent threats to natural resource that were well entrenched prior to COVID-19. Given the significance of the social disruption and economic impacts of COVID-19, the impacts of the global pandemic are likely to serve as a threat multiplier in Cambodia for the foreseeable future. USAID GPL activities, responses by local and national government, and interventions by other donors must consider COVID-19 as a threat multiplier as it will exacerbate the underlying governance, livelihood, and conservation challenges that exist within Cambodia.

I.0 INTRODUCTION

I.1 BACKGROUND

There will be significant gross domestic product (GDP) loss in Cambodia due to coronavirus disease 2019 (COVID-19). As of the drafting of this report, the revised GDP growth is projected to be 2.3% for 2020 compared to 7.1% in 2019. Many rural households are dependent on remittances from internal and external migrant workers in the tourism, garment, restaurant, niche market, superstore, and construction sectors. These sectors are among the hardest hit by the COVID-19 economic crisis. In addition, ecotourism communities have lost income because both individual tourists and tour companies have cancelled trips during the normally busy high season.

The loss of external income in combination with climate change will result in an increase in extraction of natural resources from Cambodia's protected areas. USAID Greening Prey Lang (GPL) has already witnessed a significant increase in land grabbing, illegal logging, and wildlife crime across all four provinces where the project works. In the absence of increased forest patrolling by both rangers and communities and the identification and rollout of new and targeted livelihood activities for communities living in and around protected areas, there is a high likelihood that many of the gains in protected area management made by USAID GPL and other donor supported interventions in past years will be lost.

USAID GPL needs to consider the economic impacts of COVID-19 and adaptively manage implementation. Gathering this type of information will inform adjustments to approved work planning activities, as well as the development of activities for fiscal year 2021. The World Bank has indicated that they are considering approaching Ministry of Economy and Finance to propose that a small grants program targeting communities living in and around protected areas should be rolled out in response to COVID-19. The type of information in this assessment would inform the development and roll-out of such a program.

I.2 OBJECTIVES

The objectives of the rapid COVID-19 livelihoods impact assessment were to:

1. Assess the situation of community livelihoods in the Prey Lang Extended Landscape (PLEL) that have been impacted by the COVID-19;
2. Assess the impact on natural resources management as a result of the COVID-19 outbreak; and
3. Identify the immediate livelihoods strategy to support communities.

2.0 METHODOLOGY

2.1 METHODOLOGY

The rapid COVID-19 livelihoods impact assessment targeted communities inside the PLEL. USAID GPL selected respondents from beneficiary records in its project database to ensure those interviewed would have experience engaging with project support activities. USAID GPL selected respondents with consideration of location so that information was collected from different geographic areas throughout the PLEL.

As shown in Figure I below, USAID GPL interviewed 69 respondents from 36 communes within the four PLEL provinces, which include Kampong Thom, Kratie, Preah Vihear, and Stung Treng. The broad selection of communes throughout the four provinces was done to ensure geographic differences were fully represented.

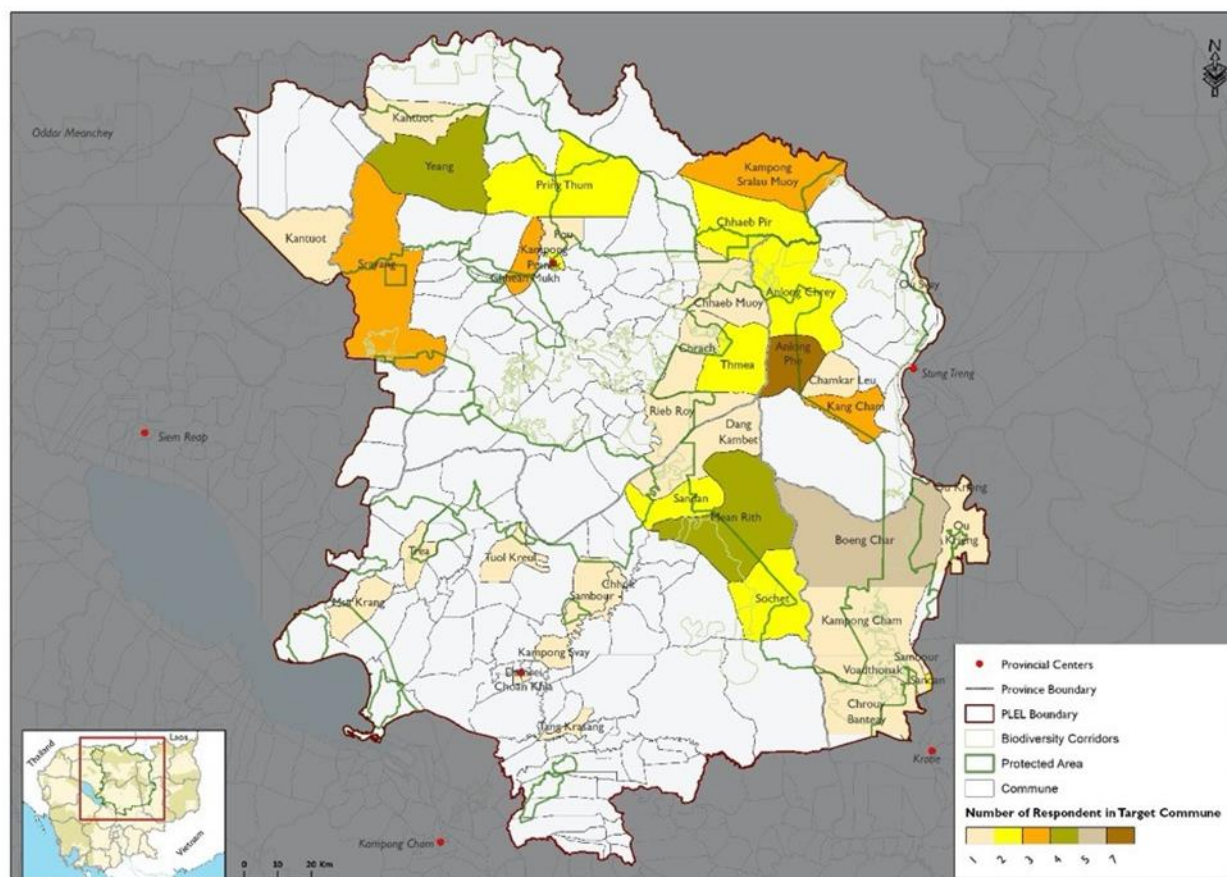


Figure I: Commune locations in the PLEL where respondents were interviewed

Of the 69 respondents who participated in the assessment, 38 were community members from different community protected areas (CPAs), agriculture cooperatives (ACs), farmer water user communities, community forests, and ecotourism communities, while 31 were key informants from local authorities (commune councils), community committees, and provincial government departments. The objective of selecting these two different types of respondents was to ensure better data triangulation. This means the community member group provided more personal information what they have done, experienced and witnessed; while key informants provided more observational information what they observed and saw happening in their community; of which both information sources are critically important for cross referencing analysis.

Data for the assessment was collected from respondents on the following topics:

1. Awareness of COVID-19;
2. Community livelihoods;
3. Impact on community livelihoods;
4. Preferred immediate livelihood options;

5. Institutional support;
6. Impact on natural resources; and
7. Suggested actions to address increasing natural resources offenses.

Data collection was conducted by phone interview, for most of the respondents, as the project encouraged its staff to practice social distancing as a prevention measure during the COVID-19 outbreak. However, where phone calls were not possible, USAID GPL staff travelled to target communities and conducted in-person interviews with social distancing precautions in place.

Data collected from interviews was noted on paper questionnaires and entered into an online form created in the USAID GPL monitoring and evaluation database. Certain types of consolidated data, for instance awareness of COVID-19, livelihood activities and type of natural resource offenses, were grouped with specific thematic areas for quantitative analysis.

2.2 LIMITATIONS

Information expressed by respondents was primarily based on respondents' experiences, opinions, and observations. No other official statistic is referenced in the report. Therefore, certain geographic analysis, for instance number of returnee to each village, may not necessarily be generalized for the entire PLEL or for other areas outside of the PLEL.

3.0 FINDINGS

5.1. AWARENESS OF COVID-19

The assessment included a survey of community members' understanding (awareness) about COVID-19 and asked what they had done to prevent themselves and their family from being infected by the disease. The results of the assessment show that all surveyed community members were aware of COVID-19. As shown in Figure 2, their awareness included various aspects of the disease, including how the disease spreads, its symptoms, prevention measures, and where it originated. A third of community member respondents knew that COVID-19 is a respiratory disease and were aware of the specific number of people in Cambodia who had been infected and recovered. While less than 20% of respondents were aware of how a person could get infected, more than 30% knew the practical measures for COVID-19 prevention such as frequently washing hands with soap, alcohol, or sanitizing gel; wearing a face mask when going out or while traveling; practicing social distancing; and avoiding big gatherings.

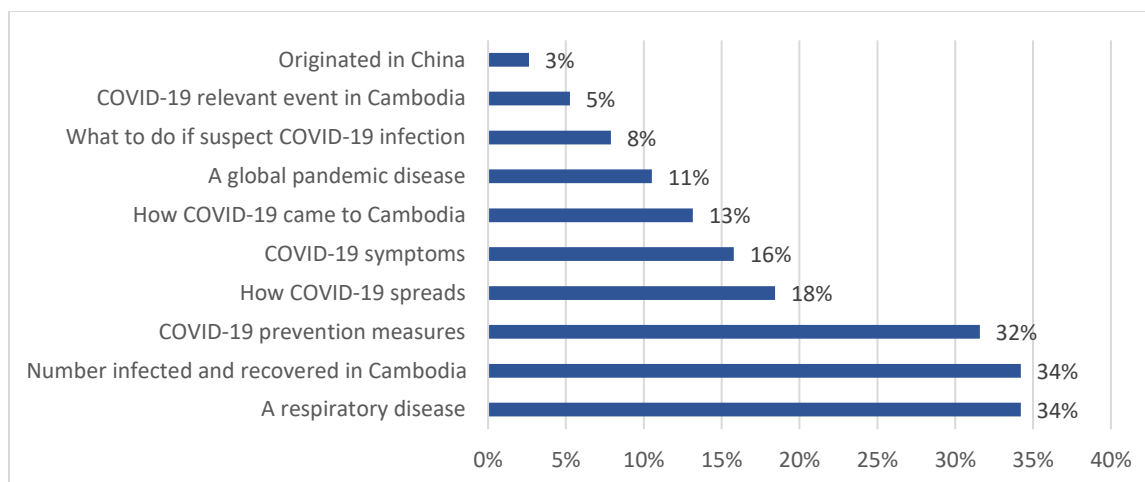


Figure 2: Community member awareness about COVID-19

With a strong understanding of the disease's seriousness and its ability to spread easily, all surveyed community members reported strictly practicing measures to keep themselves and their family safe. Almost all respondents acknowledged that they washed their hands more frequently with soap and alcohol than they had before, and the majority said they wore a face mask when going outside or while traveling. Other common prevention practices included avoiding big gatherings or meetings, practicing social distancing by not talking near each other, and eating well-cooked foods. These changes in behavior, which are illustrated in Figure 3, show that people are living more prudentially during the COVID-19 outbreak, even those living in rural community areas.

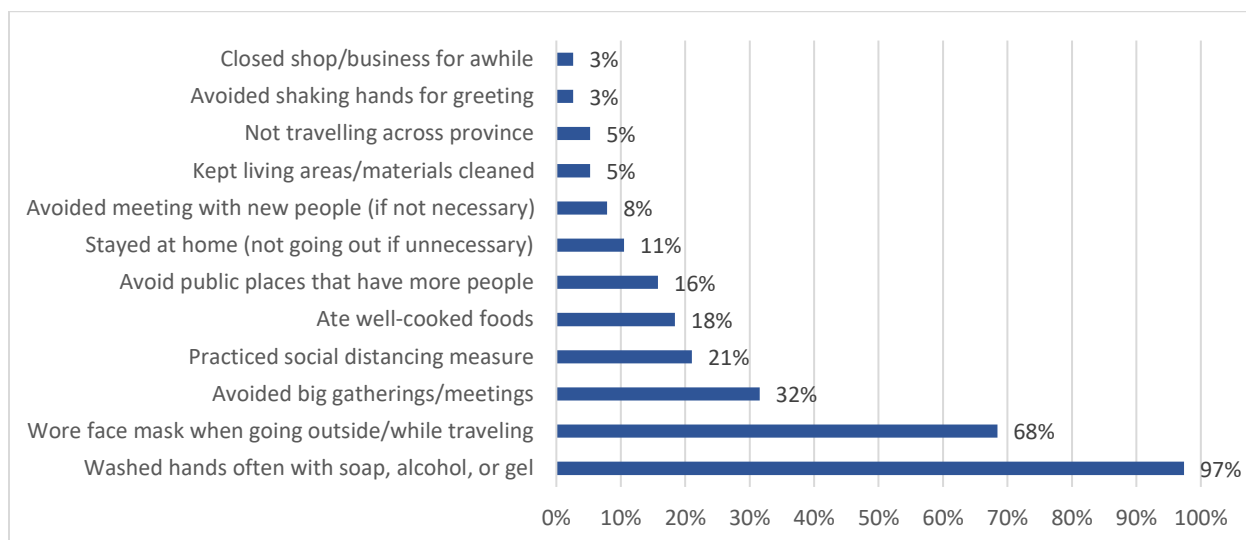


Figure 3: Community member practices to prevent COVID-19

5.2 COMMUNITY LIVELIHOODS

Community members surveyed depend on a variety of livelihoods to generate income for their families. The majority of respondents have more than one livelihood activity, and only 11% of respondents depend solely on agriculture work. Eighteen percent (18%) of respondents also have a regular monthly paid job for the government such as teaching or being a commune council member.

Among the livelihoods reported, agriculture is one of the most common as it is performed by almost all respondents (97%). This is followed by non-timber forest products (NTFPs) collection and animal raising. A third of community member respondents also do day laborer work such as collecting cashew nut, cassava plantation, construction, etc, in addition to farming and other kinds of jobs for income generation. However, agriculture is found to be one of the most common income generation sources because up to 38% of respondents also plant cashew nut and cassava, in addition to rice paddy and other crop cultivation such as corn, sesame, and vegetables. Figure 4 illustrates these findings.

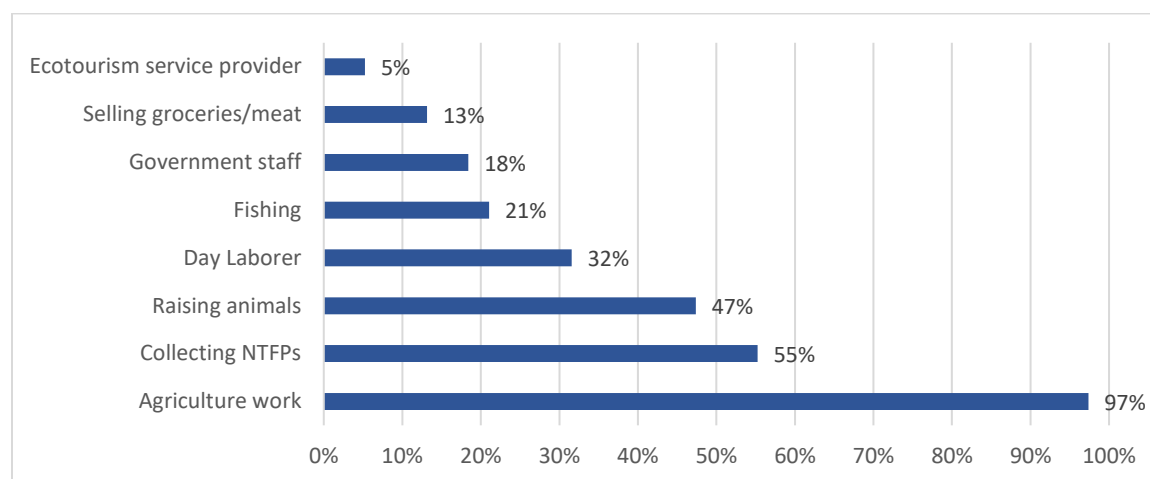


Figure 4: Livelihoods for income generation

These findings are consistent with the information from key informants, who indicated that agriculture is the most important source of family income. In addition to agriculture, almost half of the key informants (48%) also reported engagement as a day laborer as one of several other jobs that generate the most income for people in their community.

5.3 IMPACT ON COMMUNITY LIVELIHOODS

Seventy-eight percent (78%) of total respondents, both community members and key informants, reported noticeable negative impacts on community livelihoods over the past year, primarily due to two main factors: (1) climate change and (2) the COVID-19 outbreak. These impacts are discussed below and shown in Figure 5.

- Climate Change Impact:** The most significant impacts due to climate change that community members have experienced over the past year has been due to the lack of rainfall (early drought), which resulted in declining agriculture yields, particularly cashew nut and cassava. Late rainfall has also had impacts such as a delay in planting of certain crops, especially paddy rice. Higher than normal temperatures from climate change have also negatively affected livestock, causing animals to become sick and die, and led to a decline in NTFP yields, including those for resin, honey, forest fruits, and mushrooms. These negative impacts have led to a decline in income generation for communities compared to previous years.

“Because of there has not been enough rain, my rice paddy yield decreased from 100 packs last year to only 40 this year and I have not been able to collect much resin.” –A community member in Preah Vihear province.

- COVID-19 Impact:** In March 2020, the National Bank of Cambodia issued a circular on loan restructuring during the COVID-19 pandemic that focused on four sectors – tourism, garment manufacturing, construction, and transportation – in order to maintain financial stability and

relieve the burden of borrowers whose main sources of income have been impacted by the pandemic. The agriculture sector was not included in this circular; however, looking at what community people in target areas in the PLEL have experienced, COVID-19 has significantly negatively impacted their livelihoods. Surveyed respondents, both community members and key informants, reported that since the outbreak of COVID-19 in Cambodia, the price of agriculture products, especially cashew nut, have declined by approximately 50% compared to the previous year. This is due to the closing of neighboring countries' borders so that buyers could not export agriculture product for sale (based on respondent's opinion).

"Last year the cashew nut price per kilogram was between 4,500R (US \$1.12) and 6,000R (US \$1.50), but this year it's only 2,000R (US \$0.50). Sometimes there is no buyer because of COVID-19 since buyers can't export products for sale to other countries when the borders are closed." –A community member in Kratie province.

Other small-scale livelihoods, such as the selling of groceries, have also been affected by COVID-19. This is due to increasing market commodity prices, as well as declining volume of retail sales because people facing a financial downturn need to reduce spending. Twenty-four percent (24%) of the surveyed community members, especially those who used to depend on ecotourism services, experienced job loss during the COVID-19 outbreak due to unavailability of day laborer work and lack of tourists at their ecotourism sites.

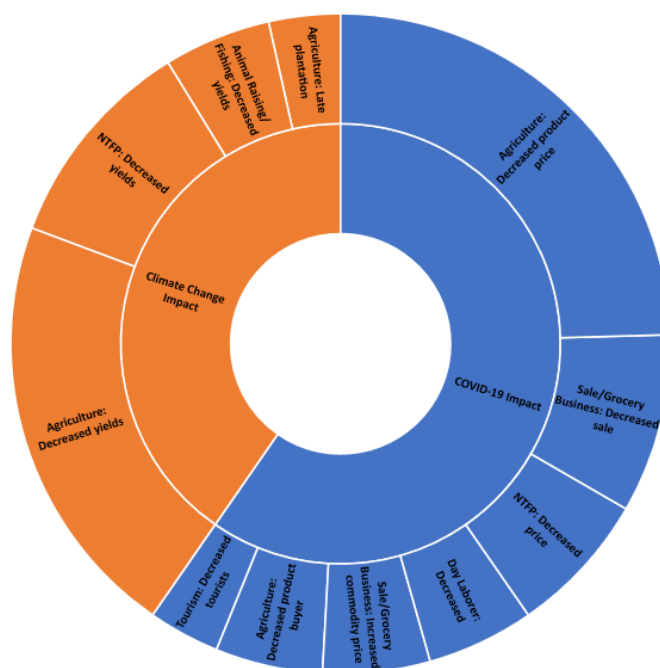


Figure 5: Climate change and COVID-19 impacts on community livelihoods

Even though most of the impacts reported are negative, there are certain positive changes noted in the agriculture sector. Four key informant respondents in Preah Vihear province (one CPA chief, two commune council chiefs, and one official from the Provincial Department of Agriculture, Forestry, and Fisheries) reported increasing rice paddy and cassava plantation this year because people could not out-migrate and many migrants have returned to their home village due to job loss or furlough during the COVID-19 outbreak.

This finding is consistent with what was reported by community members about people returning. Up to 50% of the respondents witnessed people return from Thailand, Phnom Penh, and other Cambodian provinces, mostly from Sihanouk province due to job loss and furlough. The number of returnees in each village ranged from one to 40, with villages in Kampong Thom province having the largest number of returnees of the four provinces in the PLEL. Based on respondent's observations, after returning to their home villages, many returnees assisted their family in farming and by doing day laborer work, such as cashew nut and cassava collection and construction, locally. The estimated number of community members returning to villages in Kampong Thom, Kratie, Preah Vihear, and Stung Treng province villages are shown in Figure 6.

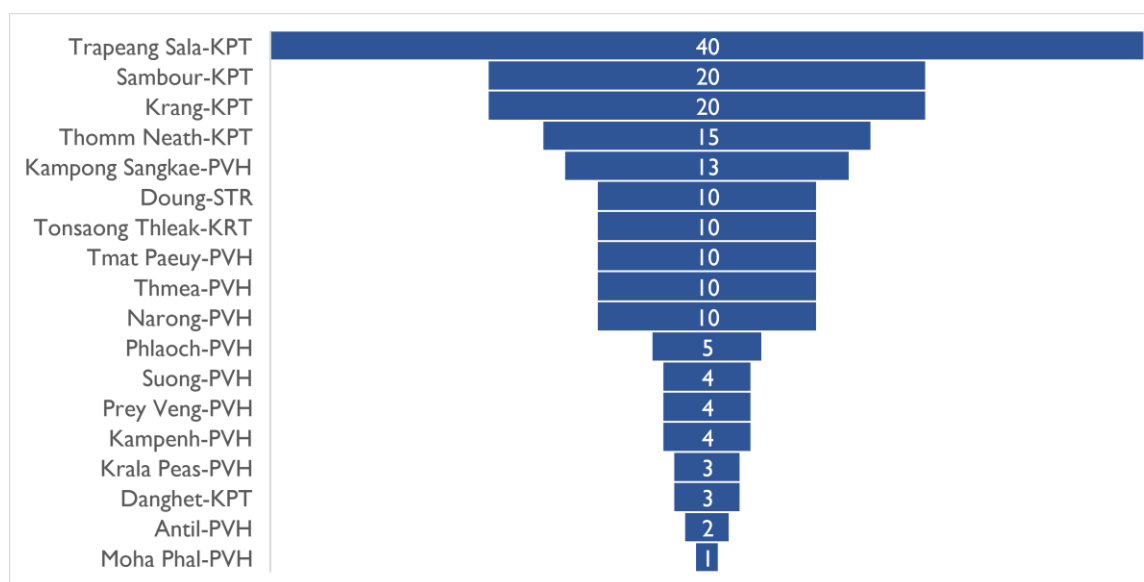


Figure 6: Estimated number of community members returning to their home village¹

Despite facing a number of problems, surveyed community members indicated that they had not taken significant concrete actions to respond to the recent loss of income, except for reducing spending and continuing agriculture activities, livestock raising, and conducting other business that they had previously been engaged in. In addition, some respondents stated that they have been selling existing agriculture products to cope with income loss.

5.4 PREFERRED IMMEDIATE LIVELIHOOD OPTIONS

While a small number of respondents had no ideas for what they could do in response to their family income shortage, many proposed raising animals and planting vegetables to supplement their earnings, while others expressed a desire to go into business, for example to sell groceries or agriculture input products (i.e., seed, fertilizers). In addition, most surveyed community members stated they would benefit financially from technical support for agriculture and livestock raising, in addition to access to a larger market with better pricing for their agriculture products and NTFPs. Preferred immediate livelihood options are illustrated in Figure 7.

¹ Values in the chart are not official statistics; they are an approximate number of returnees to a village as witnessed by community member respondents. Abbreviations: Kampong Thom (KPT), Preah Vihear (PVH), Stung Treng (STR), and Kratie (KRT).

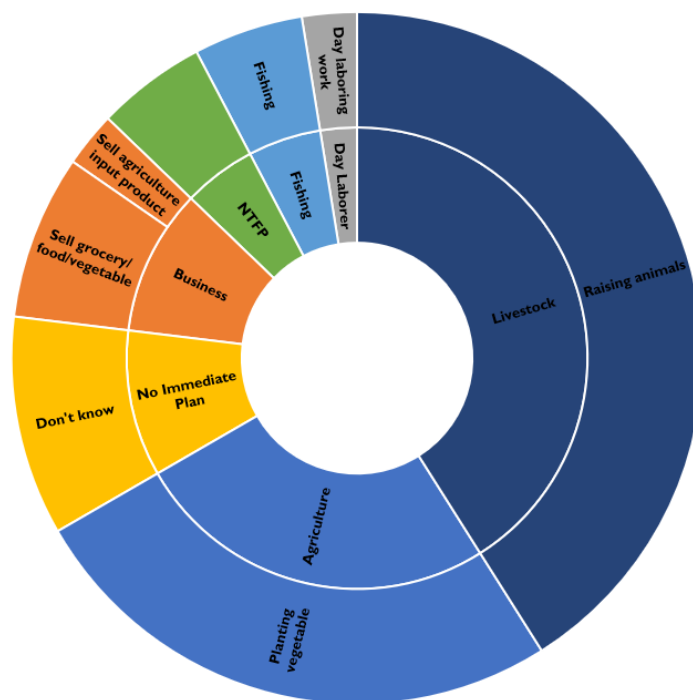


Figure 7: Preferred immediate livelihood options

5.5 INSTITUTIONAL SUPPORT

USAID GPL surveyed key informants to assess institutional support in communities for addressing the COVID-19 outbreak. The majority of key informants (61%) reported that their institution had conducted awareness raising in their community about COVID-19, including education on how to practice prevention measures. Some commune councils paid considerable attention to the movement of people, especially new people coming into their community, while others established a COVID-19 taskforce for responding to issues that might occur in their community. Other than awareness raising and relevant COVID-19 response actions, no immediate livelihood support or interventions were provided by key informants' institutions. However, 42% of key informants observed people receiving COVID-19 prevention materials (alcohol, sanitizing gel, face masks) and livelihood support such as seeds and livestock vaccines from other institutions, including Cambodian Red Cross, provincial government departments, and non-governmental organizations (NGOs). Results of this survey are shown in Figure 8.

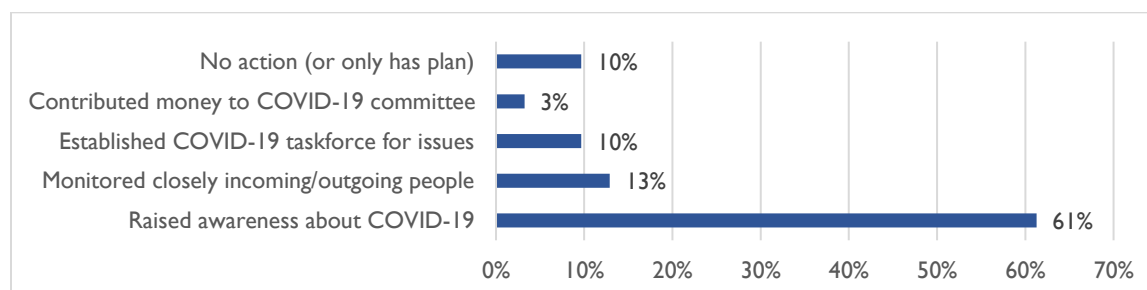


Figure 8: Institutional actions in response to COVID-19

5.6 IMPACT ON NATURAL RESOURCES

Thirty-nine percent (39%) of surveyed community members reported that natural resource offenses had increased in their communities, while the remainder reported no significant offenses. Respondents who reported no natural resource offenses are mostly those from communities located in the southern and southwestern parts of the PLEL (in Kampong Thom province), where there are no significant natural resources, in particular forest or wildlife habitat, to be threatened. However, most respondents from villages located inside or closed to Prey Lang Wildlife Sanctuary, Kulen Promtep Wildlife Sanctuary, and Chhaeb Wildlife Sanctuary reported an increasing number of natural resource offenses. Illegal logging and land clearance were the most common offenses reported, although wildlife poaching was also reported by a few respondents. Figure 9 shows the villages where offenses have increased.

“Offenses against natural resources have been increasing since April. People in the village have cut trees to sell and there have been many middlemen coming to the village to buy timber.” –A respondent from a village in Prey Lang Wildlife Sanctuary.

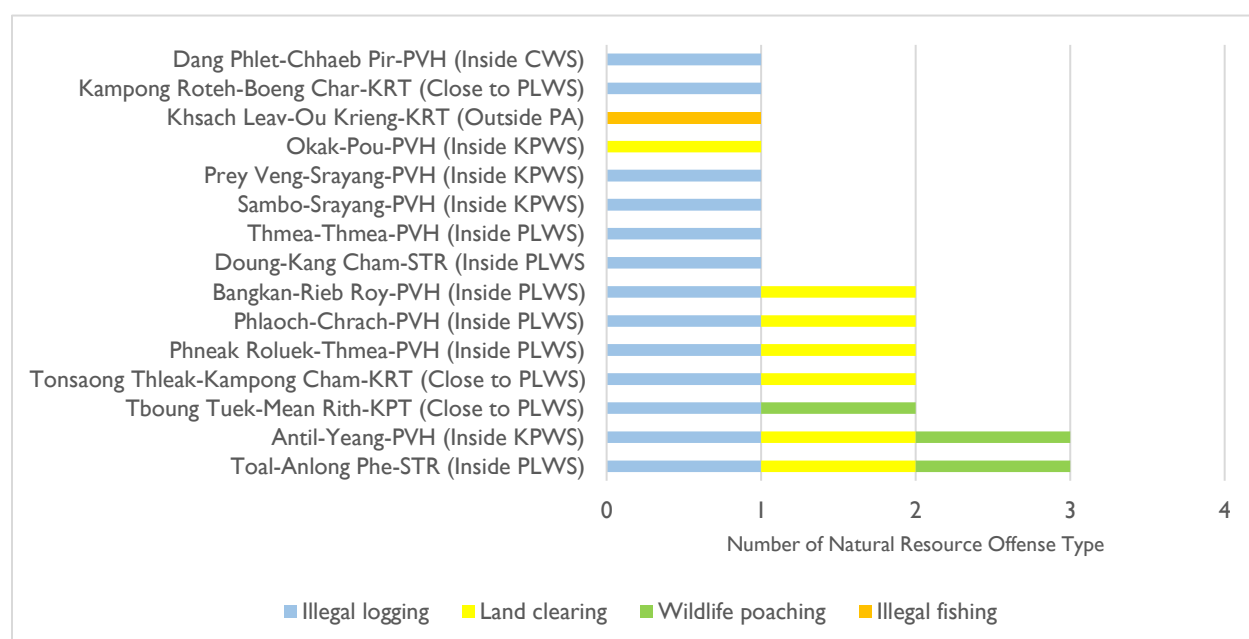


Figure 9: Villages where respondents reported increased natural resource offenses²

These offenses have resulted in natural resources losses and ecosystem changes, as shown in Figure 10. Seventy-one percent (71%) of community member respondents noticed significant changes in natural resources and ecosystems inside their village and community. The three most common changes they noticed over the past year included declining forest due to logging and land clearance, less wildlife due to poaching and habitat loss, and less water due to lack of rainfall caused by climate change. These findings are consistent with those reported by key informants, a majority of whom noted a severe lack of water in their communities due to climate change and forest loss due to logging and land clearance. Despite water shortages, there has been an increase in agricultural land as people have cleared forest land to be replaced by agriculture. Community member respondents from Toal, Doung, and Kaes villages of Anlong Phe and Kang Cham communes in Stung Treng province (inside Prey Lang Wildlife Sanctuary) reported an increasing amount of agriculture land in their villages in comparison to the past year.

² Abbreviations: Kampong Thom (KPT), Preah Vihear (PVH), Stung Treng (STR), Kratie (KRT), Chhaeb Wildlife Sanctuary (CWS), Kulen Promtep Wildlife Sanctuary (KPWS), and Prey Lang Wildlife Sanctuary (PLWS).

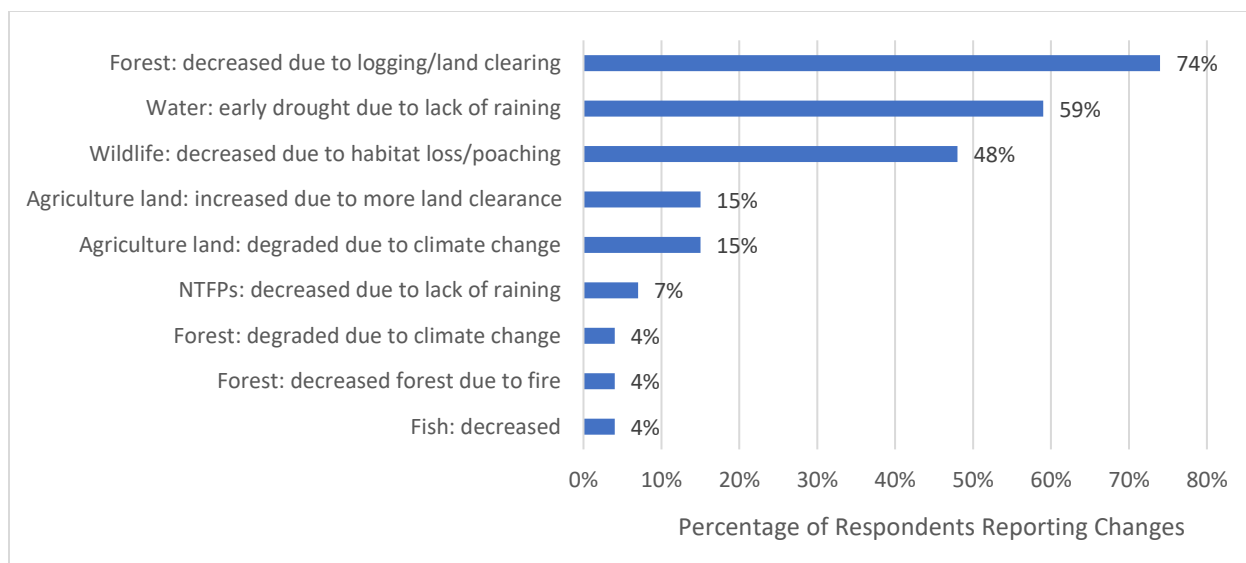


Figure 10: Impacts on natural resources observed by survey respondents

5.7 SUGGESTED ACTIONS TO ADDRESS INCREASING NATURAL RESOURCE OFFENSES

The majority of surveyed community members reported that local authorities have implemented interventions in response to the increase in natural resources offenses, including conducting patrol activities and awareness raising outreach on the forestry and fisheries laws and the importance of natural resource conservation. Only a few respondents reported that local authorities did nothing.

However, the current efforts might not be enough to combat the increase in natural resource offenses. Many community member respondents suggested more interventions are needed. The majority suggested conducting more frequent patrols or joint patrols with local authorities and relevant stakeholders, while actions such awareness raising, local stakeholder collaboration, and law enforcement against natural resource offenses need to be strengthened. Community member respondents, indicating that migrants are often identified as those involved in forest land clearance for homes and agriculture cultivation, suggested that local authorities establish a clear registration of these groups for better monitoring. Respondents also suggested, in addition to conducting resin tree inventory and monitoring more frequently, a faster process for zoning and demarcation of CPAs and protected areas (PAs) would help counter natural resource offenses.

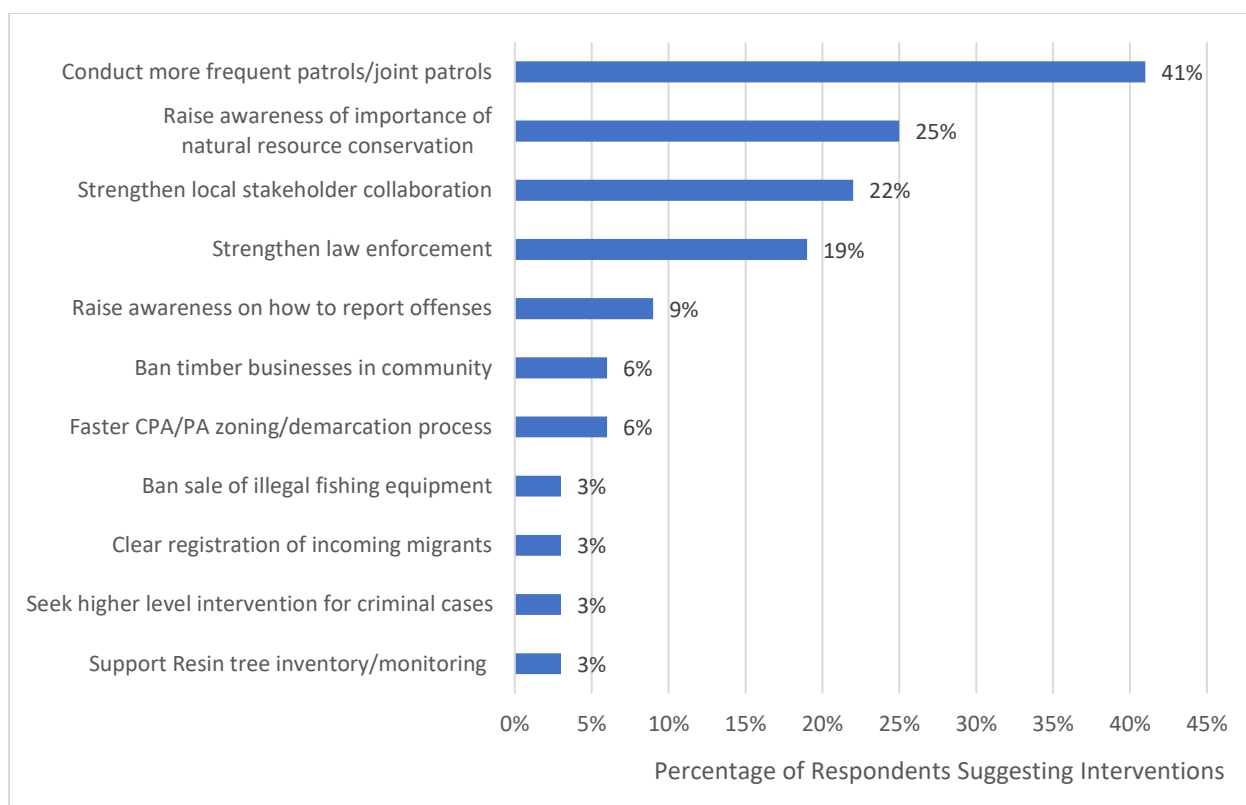


Figure 11: Suggested actions to respond to increasing natural resource offenses

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CLIMATE CHANGE AFFECTED COMMUNITY LIVELIHOODS

People in target communities in the PLEL are facing greater vulnerability in their livelihoods, primarily due to climate change. The most severe effect of climate change on livelihoods is the decrease in availability of water caused from lack of and late rainfall. This has resulted in late planting and decline in agriculture yields. Similarly, NTFP yields also decrease, especially resin, forest fruits, and mushrooms, reducing family income generation even more. The lack of rainfall and increasing temperature also have a deadly effect on livestock, fish, and wildlife, making livestock raising less profitable.

The following interventions should be considered to address these climate change impacts:

- Support implementation of climate smart agriculture.** The project should consult with relevant institutions such as the Provincial Department of Agriculture, Forestry and Fishery, NGO partners, and agriculture experts to seek advice on the types of crops that are more resilient to climate change, especially less rainfall, and connect these experts to target communities in the PLEL. In addition to rice paddy, other short-term agricultural crops (e.g., vegetables) should also be introduced and promoted to communities, especially during the early rainy season to take advantage of the rainfall.

- **Facilitate market linkages for vegetable and other agriculture products.** A common factor in the hesitance of farmers to initiate home gardening or large-scale vegetable farming (planting for business) is the lower pricing for these products, as well as the lack of water sources for irrigation. To address this, the project should help facilitate farmers to find local markets that ensure better price for vegetables and other agriculture products by providing a grant to a specialized NGO partner who has strong experience in promoting community livelihoods and conducting market linkage projects.
- **Support interventions to improve natural resource management and prevent forest loss.** Because forest loss is a significant contributor to ecosystem destruction and climate change, interventions that help prevent deforestation and encourage reforestation should be prioritized. The project should continue supporting activities that improve sustainable natural resource management, such as supporting the streamlining of the process of zoning and demarcation of target PAs and CPAs to make it faster and more efficient, strengthening law enforcement practices by conducting more patrols and joint patrols, and raising awareness of people both inside and outside communities on natural resource conservation and relevant laws that criminalize wildlife poaching and illegal logging and forest clearance. Improved management of forests and other biophysical resources will ensure better livelihoods for communities in the future.
- **Support interventions to improve retention of water resource.** Assess existing water source infrastructure in the PLEL and where appropriate support rehabilitating certain infrastructure what will support better of water for dry season supplies. This is also considered as part of biodiversity conservation effort that will prevent the risk of wildlife loss due to water shortage.
- **Mobilize investments to prevent forest loss and support communities.** To help prevent climate change and mitigate the impacts of climate change on communities, the project should continue to coordinate efforts to mobilize investments, such as REDD+, to help prevent forest loss, maintain ecosystem health, improve accessibility to ecosystem services for communities, and provide financial benefit sharing from forest protection to communities.

4.2 COVID-19 AFFECTED SALE OF AGRICULTURE PRODUCTS AND OTHER BUSINESSES

COVID-19 has restricted people's movements, reduced daily spending, and slowed down almost all aspects of business operations, including business in agriculture products. It has narrowed the market and lowered the price of agriculture products, especially cashew nut and cassava. Cashew nut, which is grown by 45% of community member respondents, has declined in price by approximately 50% compared to the previous year. This reduction in price, in addition to the loss of jobs in other sectors due to the travel ban and businesses being closed, has resulted in a significant loss of family income. COVID-19 has also negatively impacted the livelihoods of those who used to depend on ecotourism in the PLEL.

To address the financial impacts to communities from COVID-19, the project should consider the following interventions:

- **Improve local market linkages and facilitate farmers to engage with ACs.** To ensure farmers can sell all of their products and stock at improved prices, the project should support ACs to improve their capacity to find local markets for their farmers' agriculture products, especially cashew nut and cassava. The project should also facilitate engagement for target farmers to become members of ACs so that they can mobilize more buyers, especially local

buyers for their existing products, so that farmers can retain their income in the financial downturn during the COVID-19 outbreak. The engagement of more farmers with ACs will help ensure better market linkages for their products in future seasons as well.

- **Offer support for alternative livelihood options that can generate income in the short term (within two to five months).** While many people are facing income shortage, community members have proposed livestock raising and vegetable farming as immediate solutions for income generation. These may be appropriate as immediate, short term solutions. At the start of this year's rainy season, vegetable farming, home gardening, and livestock raising (only inexpensive animals as people are already facing financial shortage) would be suitable considering more people are staying home with less movement/travel. The project should work with relevant stakeholders or NGO partners to introduce and provide technical support to target communities on short term solutions such as vegetable farming and livestock raising as an immediate support intervention.
- **Promote target ecotourism sites to attract local tourists.** While international travel is still not broadly opened for tourism in Cambodia, the project should support ecotourism communities by promoting more visits by local people. Needed infrastructure support should also be provided to facilitate local visitors reaching their target tour destination. While international travel has yet to completely open due to the ongoing pandemic, local tours would be the first option for Cambodian people as well as others living in Cambodia.

4.3 INCREASING NATURAL RESOURCE OFFENSES

COVID-19 has had an indirect negative effect on natural resources, especially forest and wildlife. In certain communities in the PLEL, there have recently been a reported increase in illegal logging and land clearance for cultivation, which destroy wildlife habitat, and poisoning of wildlife. These illegal activities have also affected community livelihoods, especially those who depend on NTFPs. Logging and clearing of forest land, in addition to climate change, have continuously reduced NTFP yields and wildlife populations each year, and have a negative effect on community livelihoods due to reduced access to ecosystem services.

To counter these increasing natural resource offenses, the following activities should be considered as immediate interventions:

- **Continue support for community patrols and joint patrols and increase frequency in areas where logging and forest clearance cases have occurred.** This should be done in collaboration with local authorities and relevant institutions to identify the offenders for taking further actions.
- **Support streamlining the process of zoning and demarcation of target PAs and CPAs.** The project has made significant progress towards improving the process of CPA and PA zoning and demarcation, but community members suggested that it should be completed faster in order to have clear zoning and boundary demarcation to more effectively prevent forest offenses.
- **Strengthen local stakeholder collaboration (CPA, local authority, rangers, etc.) to build awareness of forest and natural resource protection and to ensure broad engagement towards a common goal.** Currently, interventions to address natural resource offenses are a challenge as stakeholders can have differing priorities and intentions, making it difficult to work together. Joint patrols are considered an effective intervention that could strengthen local stakeholder collaboration in natural resource conservation and protection.

ANNEXES

ANNEX I. QUESTIONNAIRE FOR INTERVIEW WITH COMMUNITY MEMBERS

Respondent Name: Sex: Phone Number:
Village: Commune: District: Province:
Interviewer Name: Date: Start Time: End Time:

- 1) What do you know about COVID-19 in Cambodia?
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- 2) What had you done to prevention yourself and your family from COVID-19?
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- 3) What major economic activities you and your family are doing?
 - a. Agriculture
 - b. Raising animals
 - c. Fishing
 - d. Poaching wildlife
 - e. Collecting NTFPs
 - f. Day laboring
 - g. Logging
 - h. Other (specify)
- 4) Which one of the economic activities mentioned generated the most income?
 - a. Agriculture
 - b. Raising animals
 - c. Fishing
 - d. Poaching wildlife
 - e. Collecting NTFPs
 - f. Day laboring
 - g. Logging
 - h. Other (specify)
- 5) How have these economic activities changed over a past year? What did cause these changes?
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- 6) Has COVID-19 affected your family economic (income generation)? If so, how did it affect?
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7) Is there anyone of your family members loss the job or had job laid off during this COVID-19 outbreak period?

a. No

b. Yes (please provide more information about the job loss or laid off)

8) Did you or your family have any alternatives or solutions to retain your family income during this COVID-19 outbreak period? If so, what were those solutions?

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9) If possible, what kind of immediate solution or livelihood do you wish to do to address financial problem that you and your family are facing?

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10) Were any returnees from Thailand, Malaysia or other provinces inside the country to the home village over the past three months? If there were, how many?

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11) To your observation, what were those returnees doing at the home village to get money for supporting the family?

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12) Did you observe increasing number of natural resource offenses in your community during this COVID-19 outbreak?

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13) If there are increasing, what kinds of natural resource offenses (e.g. land clearing, wildlife poaching, logging) you observed? Do you know who did involve in these kinds of activities?

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14) To your observation, what had you seen local authorities or relevant institutions done to combat the increasing number of natural resource offenses?

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15) What do you think should be immediately actions to combat the increasing number of natural resource offenses in your community?

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16) To your observation, what kind of natural resource you observed changing over the past year? How were they changed?

- a. Forest:
- b. Wildlife:
- c. Water:
- d. Agriculture land:
- e. Other:

17) Do you have any final comment?

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ANNEX II. QUESTIONNAIRE FOR INTERVIEW WITH KEY INFORMANTS

Respondent Name: Sex: Phone Number:
 Position: Institution Name:
 Village: Commune: District: Province:
 Interviewer Name: Date: Start Time: End Time:

I. Community Livelihood

I.1) What are the major economic activities in the province/commune?

- a. Agriculture:
- b. Raising animals:
- c. Fishing:
- d. Poaching wildlife:
- e. Collecting NTFPs:
- f. Day laborer:
- g. Logging:
- h. Other (specify):

I.2) Which one of these economic activities generated the most income?

Code	Livelihood	Classification	Note
a	Agriculture		
b	Raising animals		
c	Fishing		
d	Poaching wildlife		
e	Collecting NTFPs		
f	Day laborer		
g	Logging		
h	Other		

I.3) How have these economic activities changed over the past year? What has caused these changes?

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I.4) How has agriculture/fisheries in the region changed in the past year? What has caused these changes?

.....

II. Natural Resource

2.1) What are the natural resources that are utilized to support economic activities in the province/commune? How are these resources being used? What are the threats to these resources?

No	Natural Resources	Uses	Threats
a	Forests		

b	Wildlife		
c	Water		
d	Agricultural land		
e	Other		

2.2) How has the state of natural resources changed in the past year?

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III. COVID-19 Related Events, Agriculture and Natural Resources

3.1) Did COVID-19 related events affect economic activities for people in the province/commune? If it did, how had they got affect?

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3.2) How have COVID-19 related events affected agriculture/fisheries production and natural resources (water sources, soil, forests, etc.) in the province/commune?

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IV. Changes in Agricultural and Natural Resource Management

4.1) How do you perceive that farmers have changed their agricultural and natural resource management practices since these events have started occurring?

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4.2) What do you think your institution can do to mitigate the negative impacts?

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4.3) According to your knowledge, did farmers receive some type of support (institutional, financial resources, etc.) to help them mitigate the negative impacts? What support did they receive?

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V. Institutional Capacity

5.1) Does your institution have any action plan in respond to COVID-19? If it does, had those actions been implemented?

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5.2) What are the challenges your institution faces to be able to prevent or respond better to mitigating the negative impacts?

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5.3) How can your institution be strengthened to respond better to the negative impacts of COVID-19 on natural resources and livelihoods?

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VI. Final Observations

6.1) Do you have anything to add? Do you have any questions for us? Thank you.

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